

SERTULUM BONTOCENSE.

NEW OR INTERESTING PLANTS COLLECTED IN
BONTOC SUBPROVINCE, LUZON, BY FATHER
MORICE VANOVERBERGH.

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In the year 1909 Father Morice Vanoverbergh, who had recently come to the Philippines from Belgium, was assigned to the mission station at Bauco, Bontoc Subprovince, Luzon, and shortly after his arrival there entered into correspondence with the writer in regard to botanical matters. Father Vanoverbergh having expressed his deep interest in the study of botany, and a desire to become acquainted with the flora of the region in which he was located, an offer was made to determine, so far as possible, whatever he might submit for identification; and a small collecting outfit was sent to him. He commenced his botanical exploration of Bauco and vicinity in January, 1910, and continued it during his leisure hours until August, 1911. In this time he collected and transmitted to the Bureau of Science for determination about 1,400 numbers of plants, representing approximately 1,300 different species. The material was identified from time to time as it was received, and lists of names were sent to the collector, with special reference to those forms of which additional or more complete material was desired. In general collections received here, there is always a certain percentage of species represented which for lack of complete material can not be accurately determined, especially in those families having dioicious flowers, and in those groups where our classification is based on a combination of flower and fruit characters. Father Vanoverbergh has assiduously searched for the additional material required and accordingly I have been able to determine with a reasonable degree of accuracy a high percentage of the material collected by him.

The present paper is based primarily on specimens collected by Father Vanoverbergh; but in a number of cases I have been able, with aid of his material, to complete the determinations of specimens previously secured by other collectors and which for the most part had been determined only to the genus or family, or in some cases erroneously identified. From a study of his material I have been able to record, in the present paper, three genera, *Microcarpaea*, *Trachelospermum*, and *Teucrium*, previously unknown from the Archipelago, and two, *Microchloa* and *Blyxa*, which were included by Fathers Villar and Naves in the "Novissima Appendix" to the third edition of Blanco's "Flora de Filipinas," and whose records have not previously been verified. An apparently undescribed genus, *Vanoverberghia*, has been discovered in the collection, and I have been able to reduce one genus, *Cleistoloranthus*, previously proposed by me, so that the number of genera definitely known from the Archipelago has been increased by five. As to species originally described from extra-Philippine material but previously not definitely known from the Archipelago, I have been able to record the following eleven: *Blyxa octandra* Planch., *Microchloa setacea* (L.) Merr., *Scleria pergracilis* Kunth, *Cocculus laurifolius* DC., *Rhynchosia volubilis* Lour., *Lysimachia capillipes* Hemsl., *L. decurrens* Forst., *Microcarpaea minima* (Koenig) Merr., *Acrocephalus indicus* O. Ktze, *Utricularia exoleta* R. Br., and *Campanumoea truncata* Endl. Thirty-one species are described as new. I have previously described one new species of *Begonia* from Father Vanoverbergh's material, *B. vanoverberghii* Merr. Dr. C. B. Robinson has indicated two new species of *Elatostema*, *E. scapigerum* C. B. Rob., and *E. variabile* C. B. Rob., in the same collection. Several new species of orchids have been described by Mr. Ames,¹ while additional ones have been indicated for future publication. A study of Father Vanoverbergh's material has therefore increased our knowledge of the Philippine flora by six genera and over sixty species. I have dedicated the new genus *Vanoverberghia*, described below, to its discoverer and collector, and as its specific name I have associated with it the appellation *sepulchrei* in honor of the late Father Jules S epulchre, Father Vanoverbergh's colleague and companion at Bauco, and the founder of the mission station at that place. Father Vanoverbergh informs me that Father S epulchre took a lively interest in the botanical work and was of much assistance to

¹ Supra 1-27.

him in his botanical labors. Father S epulchre died very suddenly in Bontoc on February 13th, 1912, and was buried in the church erected by himself. It is but a very slight acknowledgement of Father Vanoverbergh's services to Philippine botany to fulfill his request and to associate with the genus dedicated to him the name of his regretted friend, colleague, and companion.

In the year 1909 I described a new genus of the *Loranthaceae*, *Cleistoloranthus*,² which on re examination and comparison with excellent material representing the same species, secured by Father Vanoverbergh, I am now able to reduce to *Loranthus*. The type of the genus and species proves to have been a specimen with immature flowers. *Cleistoloranthus* may still be worthy of sectional rank on account of the peculiar appendages to the petals, but it can hardly be retained as a distinct genus if we follow the limits of genera generally accepted in this family.

The types of the new species indicated in the present paper are preserved in the Herbarium of the Bureau of Science, which also contains a complete or nearly complete set of all the botanical material collected in Bontoc by Father Vanoverbergh. He has also sent some material to the University of Louvain, Belgium, and many duplicate orchids have been supplied to Mr. Ames. Some duplicate material still remains to be distributed by the Bureau of Science.

Father Vanoverbergh's botanical work in Bontoc was interrupted in August, 1911 by his transfer to a new station in Union Province, but on the death of Father S epulchre he was re-assigned to the Bauco station, where he plans to continue his botanical explorations.

HYDROCHARITACEAE.

BLYXA Thouars.

Blyxa octandra (Roxb.) Planch. ex Thwiates Enum. Pl. Zeyl. (1859-64) 332.

Vallisneria octandra Roxb. Pl. Corom. 2 (1798) t. 165.

Blyxa roxburghii Rich. in M em. Inst. Fr. (1811) 77, t. 5; Hook. f.

Fl. Brit. Ind. 5 (1888) 660; Naves Novis. App. (1880) 214.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 664*, July, 1910, in rice paddies, altitude about 1,250 m.

Naves' record for this species as a Philippine one has not previously been verified. Tropical Asia through Malaya to Australia, and the Caroline Islands.

² This Journal 4 (1909) Bot. 150.

GRAMINEAE.

MICROCHLOA R. Br.

Microchloa indica (Linn. f.) comb. nov.

Nardus indica Linn. f. Suppl. (1781) 105.

Rottboellia setacea Roxb. Pl. Coromandel 2 (1798) 18, t. 132.

Microchloa setacea R. Br. Prodr. (1810) 208; Hook. f. Fl. Brit. Ind. 7 (1897) 283; F.-Vill. Novis. App. (1883) 319.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh* 764, August, 1910, altitude about 1,300 m: Rizal Province, Novaliches, *Loher* 7179, June, 1904.

A species widely distributed in the Tropics, previously reported from the Philippines by Fernandez-Villar, but his record not before verified. The earliest valid specific name is here adopted.

CYPERACEAE.

CLADIUM P. Br.

Cladium cyperoides sp. nov.

Planta tenuis, perennis, plus minusve pilosa, foliis omnibus radicalibus, tenuibus, subrigidis, 4 ad 8 cm longis, circiter 1 mm latis; inflorescentiis longe et tenuiter pedunculatis, umbellatis, simplicibus vel compositis more *Fimbristylis diphyllae*; spiculis compressis, 5 ad 8 cm longis, oblongis, glumis puberulis, omnibus vel inferioribus exceptis distichis.

A slender, tufted, erect, perennial plant, the leaves and culms slightly ciliate-pubescent with white hairs, the leaves slender, all basal, flat or involute, rather rigid, 4 to 8 cm long, usually less than 1 mm wide, acute, the sheaths inflated, purple, enclosing the base of the stems. Inflorescence long-exserted, the slender leafless peduncle 10 to 30 cm long, deeply sulcate, about 0.5 mm thick. Inflorescence a simple or compound umbel, similar to that of *Fimbristylis diphylla* and allied species, rather dense, or lax, the spikelets fascicled or solitary, some sessile, others pedicelled, 5 to 20 in each inflorescence, the inflorescence subtended by 1 to several narrow, rigid, 0.5 to 2 cm long, leaf-like bracts which are inflated below and pubescent; rays few, up to 5 cm in length, usually much shorter. Spikelets brown, oblong, compressed, 5 to 8 mm long. Glumes all distichous, or the lower one or two spiral, puberulent, acute or acuminate; first glume empty, broadly ovate, 2.5 to 3 mm long, apiculate-acuminate, the apiculus 0.6 mm long; second glume 4 mm long, about 2 mm wide, acuminate, somewhat keeled, apiculate, 1-nerved, containing a perfect flower. Anthers 3, 1.8 mm long; style thickened at the base, jointed with the nut, about 3 mm long, with three 2 mm long arms; hypogynous bristles none. Nut white, obovoid, 3-angled, minutely verrucose, about 1 mm long; style deciduous.

Succeeding glumes similar to the second one, all subtending perfect flowers, usually 6 or 7 flowering glumes in each spikelet.

LUZON, Bontoc Subprovince Bauco, *Vanoverbergh 273*, hillsides, altitude about 1,320 m, first collected in March, 1910, again in May or June, 1910, and more abundant and representative material in May, 1911.

A curious species which may possibly be referable to some other genus than *Cladium*. It has very much the habit of various species of *Fimbristylis* of the *F. diphylla* group, but is at once distinguished from that and allied genera by its glumes being distichous, not spiral, or only the lower one or two spiral, very strongly resembling the spikelets of *Cyperus* in this character. It is anomalous in *Cladium* in its habit, its very slender, slightly pilose leaves, which are all basal, in its *Fimbristylis*-like inflorescence, its spikelets with mostly perfect flowers, and its glumes mostly distichously arranged.

When first received I could not refer it to its proper genus, and specimens were accordingly sent to Rev. G. Kükenthal, who reported it as probably referable to *Cladium*; in the meantime the second collection, having been received, I had also tentatively placed the material in *Cladium*. The description has been drawn up with reference to all three collections.

SCLERIA Berg.

Scleria pergracilis (Nees) Kunth Enum. 2 (1837) 354; Clarke in Hook. f. Fl. Brit. Ind. 6 (1884) 685.

Hypophorum pergracile Nees in Edinb. Phil. Journ. 17 (1834) 267.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 889*, October 5, 1910, on hillocks, altitude about 1,400 m. MINDANAO, District of Cotabato, near Makar, *Copeland*, December, 1911.

Not previously reported from the Philippines; Tropical Africa, through India and Ceylon to Yunnan. Remarkable for its lemon-scented leaves.

ZINGIBERACEAE.

ALPINIA L.

Alpinia vanoverberghii sp. nov. § *Probolocalyx*.

Herba erecta circiter 2 m alta, subtus foliis minute puberulis, inflorescentiis terminalibus pubescentibus; foliis oblongis, breviter petiolatis, usque ad 30 cm longis, 11 cm latis; racemis simplicibus quam folia longioribus, multifloris, bracteis bracteolisque nullis, pedicellis inter se remotis, solitariis vel binis, vix 2 cm longis; floribus pro genere magnis, albis, 5 ad 6 cm longis, connectivo vix appendiculato.

An erect herb about 2 m high. Leaves alternate, distichous, the sheaths of the uppermost ones frequently 30 cm long, rather loose, glabrous, the ligule chartaceous or subcoriaceous, 1.5 cm long or less, usually inequilaterally 2-lobed, the petioles 1.5 cm long or less; leaf-blades oblong, subcoriaceous, up to 30 cm long, 11 cm wide, glabrous and somewhat shining above, beneath slightly paler, shining, more or less puberulent, the base broadly

rounded or somewhat acute, the apex with a slender acumen. Racemes simple, terminal, as long as or longer than the leaves, the rachis and pedicels rather densely cinereous-pubescent, the pedicels 1.8 cm long or less, solitary, rarely in pairs, mostly 1.5 to 2 cm apart. Flowers white, 5 to 6 cm long. Calyx in bud cylindric, in anthesis spathaceous, split to the base down one side, 3 to 3.5 cm long, when spread 2.2 cm wide at the base, about 1 cm wide near the apex, the apex with three subequal, oblong-ovate teeth 3.5 to 5 mm long, densely pubescent on the back, the remainder of the calyx slightly pubescent on the back, obscurely about 17-nerved. Corolla exerted from the base of the calyx and at right-angles to it, the tube about 1.5 cm long, somewhat enlarged upwards, and nearly 1.5 cm wide at the apex. Corolla-lobes subequal, narrowly oblong, about 4 cm long, 1 cm wide, blunt, wrinkled when dry. Lip as long as the petals, about 2 cm wide above, apparently more or less cucullate, very much wrinkled when dry. Stamen-filament stout, broad at the base, when spread nearly 1 cm wide, narrowed upwards, 3 cm long; anther oblong, 2.2 cm long, nearly 5 mm in diameter, the connective not crested; staminodes linear, 1.5 cm long. Ovary pubescent, ovoid or obovoid, 3-celled, 5 to 8 mm long.

LUZON, Bontoc Subprovince, Bauco, on hillsides, altitude about 1,250 m, *Vanoverbergh* 573, June 11, 1910, locally known to the Igorot as *calawin*.

A species manifestly belonging in the subgenus *Probolocalyx*, the first one of this group to be found in the Philippines. It is well characterized by its large flowers, crestless anthers, rather lax, racemose inflorescence, and in the entire absence of bracts and bracteoles.

VANOVERBERGHIA gen. nov.

Calyx in alabastro cylindraceus, demum spathaceo-fissus, apice latus, planus, 3-dentatus. Corollae tubus calyce brevior, lobi anguste oblongi, subaequales, 2 antici alte ($\frac{1}{3}$ ad $\frac{1}{2}$) connati. Staminodia lateralia, linearia vel filiformia, elongata. Labellum petalis anterioribus alte adnatum, bifidum, lobi anguste lineares. Filamentum elongatum, concavum; antherae loculi discreti, connectivo sublatusculo, concavo, non producto. Ovarium 3-loculare, loculis ∞ -ovulatis; stylus filiformis, stigmatate subovoideo, ciliolato; nectaria bina, crassa, compressa, erecta. Herba altissima, aromatica, e rhizomate crasso. Inflorescentia terminalis, racemosa, suberecta vel nutans. Flores in quaque bractea solitarii, bracteolis nullis.

Vanoverberghia sepulchrei sp. nov.

Planta erecta, robusta, usque ad 4 m alta, glabra, aromatica; foliis oblongis, usque ad 40 cm longis, longe caudato-acuminatis,

breviter petiolatis, vaginis superioribus inflatis; racemis terminalibus, suberectis vel nutantibus, bracteis calycibus subaequilongis, persistentibus, bracteolis nullis; floribus roseis, 4 ad 4.5 cm longis, petalis anterioribus alte connatis; labellum bifidum, membranaceum, lobis albidis, linearibus.

A tall, erect, glabrous, coarse plant, with a strong anise-like odor, reaching a height of 4 m, the rhizome 5 cm in diameter, red outside, the stem green, 5 cm in diameter below, higher up 2 cm in diameter, and at the apex 1 to 1.5 cm thick. Leaves alternate, distichous, oblong, subcoriaceous, the lower ones rather short, gradually increasing in length upwards, the longest ones at the top of the stem, up to 40 cm long and 10 cm wide, the apex slenderly caudate-acuminate, the acumen about 5 cm long, the base acute or somewhat rounded and shortly decurrent-acuminate, the petiole short, 1 cm long or less; nerves very numerous, slender, ascending, densely arranged; upper sheaths inflated, coriaceous, up to 20 cm long, when spread up to 6 cm wide, longitudinally striate, the upper ones tipped with much reduced leaves, or the uppermost one subtending the inflorescence acuminate and with no vestige of a leaf. Inflorescence terminal, racemose, peduncled, at length nodding, the flower-bearing part up to 20 cm long. Flowers very numerous, about 4.5 cm long, pink outside, white within, densely disposed, one to each bract, the bracts brown, oblong, persistent, somewhat boat-shaped, 2.5 to 3 cm long, 8 to 10 mm wide, much wrinkled when old; bracteoles wanting. Pedicels stout, 5 to 10 mm long, often twisted. Calyx in bud cylindric, in flower spathaceous, split down one side nearly to the base, above flattened and about 8 mm wide, about 10-nerved, the apex with 3 oblong-ovate, obtuse, 3 mm long teeth. Corolla-tube about 1.7 cm long, the posterior lobe narrowly oblong, 3 cm long, 6 to 7 mm wide, about 7-nerved, obtuse, slightly cucullate at the apex, flat below, the base boat-shaped, inclosing the stamen, the upper one-half ultimately reflexed or spreading; anterior lobes about as long as the posterior one and similar to it, united for one-third to one-half their length, keeled below the union, the free parts flat, 5- to 7-nerved, apex obtuse and slightly cucullate. Lip sessile, membranaceous, adnate to the anterior petals as high as the cleft along the middle, the margins free, narrow, cleft above the part united to the petals into two linear, thin, flexuous lobes about 1.8 cm long, 2 mm wide below, narrowed upwards, the lobes about as long as the free parts of the anterior petals. Stamen somewhat curved, the filament stout, cylindric, about 2 cm long and 2.5 mm thick,

channeled on the inside and inclosing the style; anther about 12 mm long, 3 mm thick, somewhat curved, the connective rather broad, but semi-cylindric, so that the lateral anther-cells are contiguous, not produced, truncate or retuse at the apex. Stam- inodes linear, 1 to 1.5 cm long, thin, flexuous, 1 mm wide or less from a somewhat broader base, attached at the angle between the lip and the posterior petal. Ovary 3 to 4 mm long, 3-celled; ovules many, spreading, attached along the inner angles of the cells; style slender, surrounded by the hollowed filament below, emerging above, nearly as long as the stamen; stigma obovate, about 2 mm long, somewhat oblique, truncate or hollowed, minutely ciliate. Nectaries 2, suborbicular, compressed, about 2 mm in diameter, one on each side of the style at the base but free from it. Fruit edible, subellipsoid, 2 to 2.5 cm long, the pericarp coriaceous, very tardily dehiscent. Seeds numerous, about 3 mm long.

LUZON, Bontoc Subprovince, Malamey (Pinggat), *Vanoverbergh* 956, October 19, 1910, and mature fruits August 17, 1911, along streams at an altitude of about 1,500 meters, locally known to the Igorots as *agbab*.

This genus is closely allied to *Riedelia* Oliver, and appears to be somewhat intermediate between that genus and *Alpinia*. It differs from *Riedelia* in its rather large floral bracts, and especially in its two anterior petals being united for one-third to one-half their length, its narrow and membranaceous lip being adherent to the two anterior petals as high as the cleft between them, the lip there split into two linear lobes as long as the free parts of the anterior petals.

The genus is dedicated to Father Morice Vanoverbergh, by whom it was discovered, in appreciation of his intensive and enthusiastic botanical exploration of the region in and about Bauco where his mission station is located. The species is dedicated to his colleague, Father Jules S epulchre who came to the Philippines in November, 1907, and whose untimely death occurred in Bontoc February 13, 1912. Father S epulchre established the Bauco mission, and rendered much assistance to Father Vanoverbergh, who was associated with him in the missionary work, in the latter's botanical explorations.

LORANTHACEAE.

LORANTHUS L.

Loranthus appendiculatus nom. nov.

Cleistoloranthus verticillatus Merr. in Philip. Journ. Sci. 4 (1909) Bot. 150, 5 (1910) Bot. 345, non *Loranthus verticillatus* Ruiz & Pav.

This was originally described by me as a new genus and species, on the basis of a single collection from Mount Pulog, Benguet Province, Luzon. The original material was taken to represent mature or nearly mature specimens, but a recent collection of the same species shows that the type was quite immature, the flowers being in young bud only. In the original specimens the corolla was considered to be composed of four almost entirely

united petals, forming a cylindrical tube quite closed at the apex by an appendage from each corolla-lobe uniting to form a conical body at the mouth, the four free spreading lobes being broad and very short. This description is true of the original specimens, but quite mature flowers on recently collected material shows them not to be cleistogamous, and the corolla to be composed of four entirely free petals, and hence the species being referable to *Loranthus*, § *Heteranthus*.

Specimens from Malamey, Bontoc Subprovince, Luzon, collected by Father Vanoverbergh, in June, 1911, (no. 1293) match the type of *Cleistoloranthus verticillatus* in all respects except that some of the flowers are quite mature and open. The original description of the species must be emended as follows:

Inflorescence solitary or fascicled at the nodes, the flowers in umbellately disposed triads, or by reduction, in diads. Calyx 2.5 to 2.8 mm long. Petals 4, free, valvate, 1.6 cm long, about 1.7 mm wide, the reflexed part above the insertion of the stamen narrowly oblong, 5 mm long, about 2 mm wide, each petal with a somewhat triangular, thick appendage on the inner surface near the apex, the four appendages forming a conical body that closes the corolla in bud, the petals in bud with a spreading, 2 to 2.3 mm broad, short, truncate tip. Stamens 4 mm long, erect; filaments 2.5 mm long; anthers 1.5 mm long, continuous with the filaments and of the same diameter.

In spite of the reduction of *Cleistoloranthus* to *Loranthus* the species is a very distinct one in the latter genus, characterized by the peculiarly appendaged petals. In the generally accepted interpretations of the genera of *Loranthaceae*, *Cleistoloranthus* cannot be considered to be generically distinct from *Loranthus*, but with any treatment of genera approaching that proposed by Van Tieghem, it would probably rank as distinct as most of the genera indicated by that author.

Unfortunately the specific name originally used by me is not valid in *Loranthus*, hence the necessity of coining a new specific name under the latter genus.

Loranthus tetranthus sp. nov. § *Lepiostegeres*.

Glaber; foliis oppositis, coriaceis, oblongo-ellipticis ad lanceolatis, usque ad 6 cm longis, obtusis vel acutis, rariter leviter acuminatis, basi acutis, nervis obsolete; capitulis axillaribus, solitariis, 4-floris, in alabastro oblongo-lanceolatis, acuminatis, bracteis numerosis, ovatis ad lanceolatis, interioribus gradatim longioribus; floribus 4-meris, sessilibus, corolla circiter 2 cm longa.

Glabrous throughout, 0.5 m high, the branches terete, dark-colored when dry, the internodes rather short. Leaves opposite, oblong-elliptic to lanceolate, 4 to 6 cm long, 1 to 2.5 cm wide, coriaceous, dull, of about the same color on both surfaces, the base acute, the apex blunt, acute, or rarely somewhat acuminate;

petioles 4 to 8 mm long; midrib prominent, the lateral nerves obsolete. Flowers in axillary, solitary, 4-flowered, sessile heads, surrounded by numerous, grayish-brown, chartaceous, imbricate bracts, the outer bracts broadly ovate, acute or acuminate, 3 to 4 mm long, the inner ones gradually longer, ovate-lanceolate, prominently acuminate, the innermost up to 1 cm long, the ultimate two or three strongly imbricate forming a beaked 1 cm long calyptra that falls as a whole. Flowers pink and greenish, sessile. Calyx 3.5 to 4 mm long, somewhat angled by contact with those of the other flowers in the same receptacle, slightly and irregularly 3- or 4-toothed, the limb slightly produced. Corolla about 2 cm long, 4-lobed, the lobes united for the lower 3 to 4 mm forming a short tube about 2.5 mm in diameter, the part above the insertion of the stamens linear-oblong, 6 mm long, about 0.6 mm wide. Filaments 1.5 mm long; anthers continuous, linear-lanceolate, acuminate, 3 mm long. Style slender, 2 cm long.

LUZON, Bontoc Subprovince, Malamey, *Vanoverbergh 1294*, June 28, 1911, parasitic on trees, altitude about 1,890 m.

A very distinct species of the section *Lepiostegeres*, entirely different from the few other species of the section known from the Philippines.

Loranthus pentagonus sp. nov. § *Dendrophthoë*.

Frutex glaber, ramulis crassis, acute pentagonis; foliis alternis, coriaceis, oblongis vel oblongo-ellipticis, usque ad 12 cm longis, petiolatis, obtusis vel acutis, basi acutis vel leviter acuminatis, nervis utrinque vix distinctis, 5 vel 6; inflorescentiis in axillis superioribus; floribus 6-meris, circiter 5 cm longis, sessilibus, solitariis, in diadibus, vel in triadibus dispositis.

A glabrous parasitic shrub, the branchlets stout, 5 to 8 mm in diameter, brown when dry, distinctly and sharply 5-angled. Leaves alternate, thickly coriaceous, oblong to oblong-elliptic, 7 to 12 cm long, 3 to 5.5 cm wide, brownish-olivaceous when dry, the lower surface slightly paler than the upper one, slightly shining, apex acute or obtuse, base more or less narrowed, acute or somewhat decurrent-acuminate, rarely subrounded; nerves 5 or 6 on each side of the midrib, not prominent, the reticulations obsolete or nearly so; petioles 1 to 1.5 cm long. Inflorescence in the uppermost axils, the rachis stout, 4 to 6 cm long, bearing alternate stout branchlets 1 cm long or less, each branchlet bearing at its apex from 1 to 3 sessile flowers, the bracteole subtending the flowers broadly triangular-ovate, concave, obtuse, about 4 mm long. Flowers 6-merous, yellowish, stout. Calyx cylindrical, about 8 mm long, 4.5 mm in diameter, truncate, or very slightly and obscurely toothed. Corolla 4.5 cm long, the

tube slightly gibbous at the base and 5 mm in diameter, the lobes 3 mm wide below, narrowed above, the reflexed part above the insertion of the stamens about 1.5 cm long, thickened, 2 mm wide, the margins incurved. Filaments 3 to 4 mm long; anthers continuous, erect, linear-lanceolate, about 1 cm long.

LUZON, Bontoc Subprovince, Bauco, in forests, altitude about 1,650 m, *Vanoverbergh 1254*, June 13, and August 17, 1911.

A characteristic species, its distinctive features being its stout, 5-angled branchlets, and its comparatively large flowers, the corolla being somewhat gibbous at the base.

MENISPERMACEAE.

COCCULUS DC.

Cocculus laurifolius DC. Syst. 1 (1818) 530, Prodr. 1 (1824) 100; Diels in Engl. Pflanzenreich 46 (1910) 239.

LUZON, Bontoc Subprovince, Daoait, *Vanoverbergh 1237*, June, 1911, along trails, altitude about 1,200 m.

Not previously reported from the Philippines, the third species of the genus to be found in the Archipelago. India to Japan, southern China, Formosa, and Java.

The specimen is a fairly close match for *Wallich 4965*, a specimen of which is in our herbarium, as well as several specimens from plants cultivated in the Botanic Garden at Buitenzorg, Java.

MAGNOLIACEAE.

ILLICIUM Linn.

Illicium montanum sp. nov.

Arbor parva, glabra, aromatica; foliis oblongo-ellipticis, utrinque acutis vel leviter acuminatis, coriaceis, usque ad 8 cm longis, nervis utrinque circiter 7, obscuris vel subobsoletis; floribus axillaribus, fasciculatis, circiter 3 cm diametro; folliculis circiter 12, radiatis, 1.5 ad 2 cm longis, acuminatis.

A small, glabrous, aromatic tree about 4 m high. Branches olivaceous when dry. Leaves coriaceous, dark-brown when dry, slightly shining, oblong-elliptic, narrowed about equally at both ends and acute or slightly acuminate, 5 to 8 cm long, 2 to 3.3 cm wide, the midrib very stout and prominent; lateral nerves about 7 on each side of the midrib, very faint, often nearly obsolete, the reticulations obsolete; petioles about 1 cm long. Flowers white, axillary, somewhat fascicled, the buds ovoid, sessile, soon becoming short-pedicelled. Sepals and petals about 20, the outer ones in bud ovate, apiculate, their margins ciliate, deciduous or persisting until anthesis and elongated, the outer sepals in flower oblong, about 15 mm long, 6 mm wide, obtuse, the inner ones gradually shorter and narrower, the innermost petals lanceolate, long-acuminate, about 10 mm long. Stamens

about 20, in two rows, 3 to 4 mm long. Carpels about 12, acuminate, 5 mm long, in fruit radiately arranged, laterally compressed, lanceolate, 1.5 to 2 cm long, about 5 mm deep.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 1048*, January, 1911, in forests, altitude about 1,650 m.

The second species of the genus to be found in the Philippines, differing from *Illicium philippinense* Merr., to which it is closely allied, in its larger flowers, more numerous perianth-segments, and larger and more numerous mature carpels.

LEGUMINOSAE.

RHYNCHOSIA Lour.

Rhynchosia volubilis Lour. Fl. Cochinch. (1790) 460; DC. Prodr. 2 (1825) 385; Hemsley in Journ. Linn. Soc. Bot. 23 (1887) 196.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 654*, July, 1910, altitude about 1,400 m.

Not previously reported from the Philippines; China to Formosa and Japan.

The specimen seems to be referable to Loureiro's species, as that is at present interpreted; it differs from it, as described, in having the leaflets shortly acuminate, not obtuse. The Luzon plant is matched in all respects by one from Formosa, *Nakahara 195*, July, 1905.

DERRIS Lour.

Derris oblongifolia sp. nov. § *Paraderris*.

Frutex erectus vel scandens, partibus junioribus plus minusve ferrugineo-pubescentibus vetustioribus glaber vel subglaber; foliis pinnatis, circiter 20 cm longis, foliolis 13, oblongis vel anguste oblongo-obovatis, acuminatis, 3 ad 7 cm longis; racemis axillaribus, ferrugineis, quam folia multo brevioribus; floribus fasciculatis, albidis vel roseis, circiter 1.7 cm longis, vexillo piloso, basi subcalloso; leguminibus oblongis, 5 ad 8 cm longis, 1.5 ad 2 cm latis, subglabris.

A scandent woody vine, or suberect and about 1 m high, the younger parts more or less ferruginous-pubescent, in age becoming glabrous or nearly so. Branches dark-brown, lenticellate, slightly pubescent, the younger parts very densely ferruginous-pubescent. Leaves alternate, about 20 cm long, pubescent with scattered, short hairs, becoming nearly glabrous; leaflets 13, oblong to narrowly oblong-obovate, when young membranaceous, becoming firmly chartaceous, 3 to 7 cm long, 1.5 to 2 cm wide, base rounded or subacute, the apex shortly and rather abruptly acuminate, the lower surface slightly paler than the upper, in age becoming quite glabrous except for scattered hairs along the midrib; lateral nerves about 10 pairs, slender but distinct; petiolules 2 to 3 mm long. Racemes in the upper axils, solitary,

appearing with the leaves, forming a terminal leafy inflorescence, rather densely ferruginous-pubescent. Flowers fascicled at the nodes, white or pink, their pedicels pubescent, 6 to 7 mm long. Calyx ferruginous-pubescent, cup-shaped, subtruncate, 5 to 6 mm deep and wide, faintly and broadly toothed. Standard about 17 mm long, the claw 3 to 4 mm long, the lamina suborbicular, retuse, pubescent on the back, reflexed in anthesis, the base with thickened but not projecting callosities. Wings adherent to the keel, their claws slender, about 6 mm long, their blades narrowly oblong, about 4 mm wide, similar to those forming the keel. Vexillary filament free at the base, united with the others above. Ovary somewhat pubescent. Fruit very thin, oblong, 5 to 8 cm long, 1.5 to 2 cm wide, acuminate, when young with very few scattered short hairs, apparently when mature glabrous or nearly so, one wing about 2.5 mm wide, the other less than one-half as wide.

LUZON, Bontoc Subprovince, Bauco, on hillsides, altitude about 1,325 m, *Vanoverbergh* 280, in flower April, 1910, in fruit May, 1911.

A species apparently undescribed, and quite different from any of the Philippine forms previously known. Although the callosities of the standard do not project as in *Derris elliptica* Benth., still they are sufficiently evident as thickenings of the tissue, and apparently refer the present species to the section *Paraderris*.

TERAMNUS Sw.

Teramnus angustifolius sp. nov.

Herba scandens omnibus partibus plus minusve ferrugineo-pubescent; foliis lanceolatis usque ad 7 cm longis, vix 1 cm latis; calycis dentibus lanceolatis, acuminatis, aequalibus, 2 mm longis.

A scandent, slender, herbaceous vine reaching 1 m in length. Stems 4-angled, 1.5 mm in diameter or less, rather densely pubescent with somewhat spreading ferruginous hairs. Leaves trifoliolate, the petioles, petiolules and lower surfaces of the leaflets more or less appressed-pubescent with ferruginous hairs, the stipels pubescent, acicular, about 1 mm long; petioles 1.5 to 3 cm long; petiolules of the lateral leaflets usually about 2 mm long, that of the terminal one longer. Leaflets lanceolate, 4 to 7 cm long, 5 to 9 mm wide, chartaceous, base rounded or acute, narrowed upwards to the apiculate apex. Racemes pubescent, axillary, solitary, few-flowered, 2 to 9 cm long, slender. Calyx 4.5 mm long, appressed-pubescent, the 5 lobes subequal, lanceolate, acuminate, 2 mm long. Corolla almost included in the calyx, blue and white; standard 5.5 mm long, the limb orbicular-elliptic, retuse, not auricled at the base, 4 mm long, 3 mm wide,

the claw about 1.5 mm long; wings and keel nearly as long as the limb, clawed, narrow. Stamens monadelphous, the vexillary one united with the others at the base, then free for about 0.5 mm, then united with the others again, forming a closed tube, five of the filaments bearing fertile anthers about 0.4 mm long, the other five without anthers. Ovary cylindric, somewhat pubescent, bearded at the apex, the style short, curved; ovules about 10. Young pods somewhat flattened, slightly pubescent, 4 cm long, 3 mm wide.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 716*, July 28, 1910, in cultivated lands, altitude 1,300 m.

A very distinct species, at once recognizable by its lanceolate, comparatively very narrow leaflets.

RUTACEAE.

EVODIA Forst.

Evodia villosa sp. nov.

Frutex circiter 1.5 m altus, ramulis, subtus foliis inflorescentisque dense fulvo-villosus; foliis unifoliolatis, foliolis ellipticis vel oblongo-ellipticis, breviter acuminatis vel acutis, 10 ad 15 cm longis, nervis prominentibus, utrinque 7 ad 10; inflorescentiis axillaribus, brevibus, in alabastro densissimis; floribus 4-meris, calycis villosis.

A shrub about 1.5 m high, the branchlets, petioles, lower surfaces of the leaves and inflorescence densely fulvous-villous, the indumentum rather pale. Leaves opposite, 1-foliolate, the petiole stout, about 2 cm long. Leaflets elliptic to oblong-elliptic, coriaceous, 10 to 15 cm long, 3 to 6.5 cm wide, rather pale when dry, shining, the apex shortly acuminate or merely acute, the base acute, rarely somewhat rounded, the upper surface fulvous-villous, densely so on the midrib and nerves; lateral nerves 7 to 10 on each side of the midrib, prominent, arched-anastomosing, the reticulations distinct. Inflorescence in the upper axils, in bud dense, not exceeding the petioles, many-flowered. Flowers 4-merous, yellowish-green. Sepals obtuse, oblong, densely villous outside, 2 mm long. Petals (in nearly mature bud) oblong-elliptic, obtuse, punctate, 2 mm long. Ovary ovoid, densely villous, about 1.3 mm long; style subquadrangular, subsessile, about 0.6 mm in diameter. Stamens 4, short. Fruit unknown.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 1002*, November 15, 1910, in forests, altitude about 1,650 m.

A species not closely allied to any other known Philippine form, well characterized by its villous, pale-fulvous indumentum.

VITACEAE.

TETRASTIGMA Planch.

Tetrastigma brunneum sp. nov.

Frutex scandens, glaber, ramulis teretibus; foliis palmato 3- ad 5-foliolatis, foliolis coriaceis, in siccitate brunneis, ovatis, oblongo-ovatis, vel subellipticis, basi acutis vel rotundatis, apice abrupte subtenuiter acute acuminatis apiculatisque, margine distanter crenato-serratis; inflorescentiis axillaribus, laxis, corymboso-paniculatis; floribus 4-meris, subumbellato dispositis, circiter 1.5 mm longis, numerosis; fructibus obovoideis vel oblongo-obovoideis, 8 mm longis; seminibus 2, plano-convexis, rugosis, haud sulcatis.

A woody vine 5 to 6 m in length, glabrous throughout. Stems and branches terete, light-brown, striate, the branchlets usually smooth, black or dark-colored when dry. Tendrils leaf-opposed, forked, up to 18 cm in length. Leaves palmately 3- to 5-foliolate, their petioles 1.5 to 5 cm in length. Leaflets ovate, oblong-ovate, or subelliptic, firmly coriaceous, always brown when dry, the lower surface a little paler than the upper one, slightly shining, 5 to 10 cm long, 2 to 5 cm wide, the middle leaflet larger than the lateral ones, abruptly and rather slenderly acutely acuminate, the acumen apiculate, the base rounded or acute, the margin distantly crenate-serrate, the teeth usually rather prominent, often apiculate; nerves 5 or 6 on each side of the midrib, not prominent, anastomosing, the reticulations lax, obscure; petiolules of the lateral leaflets 4 to 8 mm long, that of the middle one about 1.5 cm in length. Inflorescence axillary, rather lax, corymboso-paniculate, many-flowered, peduncled, about 8 cm long, enlarged in fruit and often forming terminal or subterminal more or less leafy panicles. Male flowers: Calyx shallowly cup-shaped, truncate, about 1 mm in diameter. Petals 4, free, oblong, 1.8 to 2 mm long, obtuse, cucullate at the apex inside. Filaments about 1 mm long, inserted under the broad disk; anthers 0.5 mm long, broader than long. Disk prominent, obscurely 4-angled or lobed. Female flowers: Calyx somewhat funnel-shaped, truncate, 1.2 mm in diameter. Petals as in the males. Staminodes slender, 1 mm long, slightly dilated at the apex. Ovary cylindrical-ovoid, truncate, glabrous, 1.2 mm long; stigma sessile, disk-like, not at all or very obscurely lobed, 0.7 mm in diameter. Fruit obovoid to oblong-obovoid, about 8 mm long, apparently somewhat fleshy, each containing two plano-convex seeds, or the

inner face slightly concave, not sulcate, somewhat rugose, brown, the albumen ruminant.

LUZON, Bontoc Subprovince, Malamey, *Vanoverbergh* 795 (type), August, 1910, in forests, altitude about 1,550 m, with ♂ flowers, a second collection in December, 1910, with immature fruits: Benguet Subprovince, Pauai, *Bur. Sci.* 8410 *McGregor*, June, 1909, with very immature flowers, altitude about 2250 m; Mount Tonglong, *Bur. Sci.* 5125 *Ramos*, December, 1908, with immature fruits, altitude about 2,100 m, *Williams* 1336, October, 1904: Province of Tayabas, Mount Binuang, *Bur. Sci.* 9434 *Robinson*, August, 1909, with ♀ flowers; Lucban, Mount Banajao, *Elmer* 7796, May, 1907, with mature fruits, distributed as *Tetrastigma lanceolarium* Planch.: Province of Bataan, Mount Mariveles, *Bur. Sci.* 1560 *Foxworthy*. Probably also should be referred here *Elmer* 10867 from Mount Apo, Mindanao, distributed as *Tetrastigma pergamaceum* Blume.

Apparently allied to *Tetrastigma pergamaceum* Blume, but differing from that species, as described, in its terete stems, its 3- to 5-foliolate leaves, never 1-foliolate as is usually the case in Blume's species, and in its axillary, not leaf-opposed cymes. The species is not typical of *Tetrastigma*, as the stigmas are perfectly circular in outline, not at all lobed, but has been placed in the genus as it agrees in other details, especially in its 4-merous flowers, and in its fruit and seed characters.

Tetrastigma philippinense sp. nov.

Species *T. loheri* similis et ut videtur valde affinis differt petalis extus distincte pubescentibus.

A tendril-bearing dioecious vine reaching a height of 10 m, and the trunk a diameter of 2 cm, glabrous except the inflorescence. Branches terete, brownish, smooth, slender. Leaves 3-foliolate, their petioles 1 to 2.5 cm long; leaflets lanceolate, submembranaceous to coriaceous, dull or slightly shining, of about the same color on both surfaces, the middle one longer than the lateral ones, equilateral, obtuse, rounded, or subacute at the base, the lateral ones somewhat falcate, inequilateral at the usually rounded base, all acuminate at the apex, margins often slightly undulate, distantly serrulate-crenate, the teeth usually mucronulate, 6 to 16 cm long, 1.5 to 4.5 cm wide; lateral nerves 7 to 10 on each side of the midrib, not prominent, the reticulations lax, obsolete or indistinct; petiolules of the middle leaflets 1 to 2 cm long, of the lateral ones 5 mm or less. Tendrils simple, 10 to 15 cm long or more. Inflorescence axillary, pubescent, about as long as the petioles, compound, umbellately corymbose, the flowers subumbellately arranged on the ultimate branchlets. Female flowers: Calyx obscurely 4-toothed, about 1.5 mm in diameter. Petals 4, oblong, pubescent externally, obtuse, somewhat cucullate at the apex, 2 to 2.2 mm long. Ovary ovoid, glabrous, 1.5 mm long, slightly contracted upwards; stigma

sessile, distinctly but shallowly 4-lobed. Staminodes slender, spatulate, 1 to 1.2 mm long. Male flowers similar to the female ones in size. Filaments 1.5 mm long; anthers broadly ovoid or ellipsoid, 0.6 mm long. Disk prominent. Fruit oblong-obovoid, red, turning dark-purple or black, the pericarp more or less fleshy when fresh, apparently thin. Seeds solitary, with a shallow longitudinal groove along each side, obscurely sulcate, the albumen ruminant.

Type specimen *R. S. Williams 1025*, Antamok, Benguet Subprovince, Luzon, October 22, 1904, with ♀ flowers, altitude about 1,000 m.

This species is common and widely distributed in the Philippines, and most of the material below referred to it has been determined here as *Tetrastigma lanceolarium* Planch., a few specimens as *T. angustifolium* Planch., and very recently a number have been referred to *Tetrastigma loheri* Gagnep., the latter determinations being based on a specimen of *Whitford 19*, referred by Gagnepain to his species.³ However, *Whitford's* specimen is with fruit only, and its determination as *Tetrastigma loheri* Gagnep., must have been based on strong vegetative resemblances between it and the type of the species, *Loher 371*. According to Gagnepain's description, and according to the characters used by him in his key to the Asiatic species,⁴ all the material cited below must belong to a different species than *T. loheri*, for that species has glabrous petals, while all our material of *T. philippinense* has pubescent petals. As to *Whitford 19* it is impossible to say whether or not the petals were glabrous or pubescent, but abundant material from the same locality in flower, which matches it in all respects, so far as the material in different stages is comparable, has pubescent petals. I have no hesitation in referring to *Tetrastigma philippinense* the following material:

LUZON, Province of Ilocos Norte, *For. Bur. 12489 Merritt & Darling*, November, 1908: Bontoc Subprovince, Bauco, *Vanoverbergh 646*, June, October, 1910, ♀ flowers: Benguet Subprovince, lower slopes of Mount Pulog, *Merrill 6394*, May, 1909, ♀ flowers; Sablang, *Bur. Sci. 12730 Fénix*, November, 1910, with young fruits: Province of Bataan, Lamao River, Mount Mariveles, *Williams 349, 792*, December, 1903, January, 1904, the former with ♂ Flowers, the latter with immature fruits, *For. Bur. 2310 Meyer*, December, 1904, ♀ flowers, *Bur. Sci. 1872 Foxworthy*, December, 1906, ♂ flowers, *Whitford 19*, April, 1904, with mature fruits; Dinalupijan, *Merrill 1590*, December, 1902, with ♂ flowers: Province of Pampanga, Arayat, *Merrill 1419*, March, 1903, with mature fruits: Province of Laguna, Cavinti, *Loher 5837*, February, 1906, with immature fruits: Province of Rizal, Montalban, *Loher 5824*, January, 1905, with ♀ flowers; Caytimon, *Bur. Sci. 10897 Ramos*, October, 1909: Province of Tayabas, *Bur. Sci. 13277 Ramos*, March, 1911, in fruit, *Bur. Sci. 12325 Foxworthy*, with very young fruits. MINDORO, Baco River, *McGregor 261*, April, 1905, in fruit, *Merrill 1240*, January, 1903, in fruit. PALAWAN, *Merrill 846*, February, 1903, with ♂ flowers and with fruits. MINDANAO, Butuan Subprovince,

³ Not. Syst. 1 (1910) 265.

⁴ L. c. 312.

Weber s. n., March 15, 1911, with fruits: District of Davao, *Copeland 533*, March, 1904, with ♂ flowers and with fruits.

Native names: *Chanon* (Igorot, Benguet); *Ayo, Ayu* (Tagalog, Bataan, Rizal, Pampanga, etc.).

Tetrastigma sepulchrei sp. nov.

Frutex scandens, inflorescentiis exceptis glaber, ramulis teretibus, striatis, vix tuberculatis; foliis 3-foliolatis vel pedato-5-foliolatis, foliolis coriaceis, nitidis, oblongis, usque ad 12 cm longis, acuminatis, distanter crenato-denticulatis; inflorescentiis axillaribus vel oppositifoliis, 2- vel 3-pinnatim umbellato-corymbosis, petiolo aequantibus vel longioribus; floribus umbellato-dispositis, extus leviter pubescentibus, petalis oblongis, 3 mm longis, supra glanduloso-corniculatis; ovario piloso.

A scandent vine about 3 m high, glabrous except the inflorescence, the branches terete, striate, smooth, olivaceous when dry. Tendrils leaf-opposed, stout. Leaves palmately 3-foliolate or more commonly pedately 5-foliolate, their petioles 3 to 5 cm long. Leaflets oblong, coriaceous, shining, of about the same color on both surfaces when dry, the lower surface duller than the upper one, 9 to 12 cm long, 3 to 4.5 cm wide, acuminate, base acute or somewhat rounded, of the lateral ones usually inequilateral, the margins more or less recurved, distantly crenate-denticulate; primary lateral nerves 7 to 9 on each side of the midrib, distant, anastomosing, the reticulations obsolete or nearly so; petiolule of the middle leaflet about 2 cm long, the common one of the two lateral leaflets about one-half as long, their petiolules proper 3 to 5 mm in length. Inflorescence leaf-opposed and axillary, 5 to 10 cm long, slightly pubescent or nearly glabrous, rather lax, 2- or 3-pinnately umbellate-corymbose, the primary branches opposite or umbellately arranged, each bearing 4 or 5 or more umbellately arranged secondary branches, these in turn bearing few to many umbellately arranged flowers. Flowers 4-merous (very rarely 5-merous), dioecious, their pedicels 3 to 5 mm in length. Pistillate flowers: Calyx disk-like, truncate, 1.5 mm in diameter, glabrous. Petals 4 (rarely 5), uniformly but sparingly pubescent externally oblong or oblong-ovate, somewhat narrowed upwards, obtuse or acute, distinctly hooded at the apex and some or all with an apical dorsal gland with a short, stout, reflexed process at its base. Staminodes very slender, 1 mm long. Ovary 2 mm long, narrowed upwards, glabrous. Stigma sessile, truncate, obscurely 4-lobed.

LUZON, Bontoc Subprovince, Bauco, in forests, altitude about 1,650 m, *Vanoverbergh 1215*, May 18, 1911.

According to Gagnepain's recent treatment of this genus the species above described is allied to *Tetrastigma crassipes* Planch., and to *T. pedunculare* Planch., although apparently not very close to either. It is dedicated to Father Jules S epulchre, Father Vanoverbergh's colleague and companion at Bauco and founder of the mission at that place whose recent sudden death is greatly deplored.

TILIACEAE.

GREWIA L.

Grewia setacea sp. nov.   *Eugrewia*.

Arbor parva, omnibus partibus plus minusve simpliciter vel admodum stellato-pilosis, partibus junioribus ferrugineis; foliis oblongis vel oblongo-ovatis, acutis vel breviter acuminatis, basi obtusis vel rotundatis, aequilateralibus, trinerviis, margine crenato-denticulatis; stipulis setaceis; inflorescentiis axillaribus, solitariis, umbellatis; floribus bracteatis, circiter 9 mm longis, petalis 2 mm longis, ciliatis.

A small tree, all parts more or less pilose or pubescent with simple or somewhat stellately-arranged hairs, the young shoots and leaves rather densely ferruginous-pilose, the older parts with scattered hairs. Branches terete, dark-colored, somewhat pubescent. Leaves oblong to oblong-ovate, firmly chartaceous or subcoriaceous, 5 to 8 cm long, 2 to 3.5 cm wide, equilateral, somewhat shining when dry, slightly paler beneath, the apex acute or shortly acuminate, the base obtuse or rounded, margins rather finely and uniformly crenate-serrate, the upper surface pubescent on the midrib and nerves, the lower surface with simple or stellate, more or less scattered, pilose hairs on the nerves and reticulations; basal nerves extending above the middle of the leaf, the lateral ones above the basal pair about 4 on each side of the midrib, ascending, prominent beneath; petioles densely pubescent, 5 to 8 mm long; stipules setaceous, somewhat pubescent, about 1 cm long. Inflorescence of axillary umbels, solitary or in pairs, stellate-pubescent, the flowers few, usually about three, their pedicels subtended by a whorl of linear-lanceolate, acuminate, 5 to 7 mm long, slightly pubescent bracteoles, the pedicels 4 to 7 mm long, the peduncles usually about 1.5 cm in length. Sepals oblong, obtuse, pubescent, about 9 mm long, 2 to 2.2 mm wide. Petals elliptic-oblong or ovate-elliptic, distinctly ciliate-pilose, about 2 mm long, 1.5 mm wide. Stamens 1 mm long or less; anthers subglobose (perfect?), 0.2 mm long. Ovary villous; style glabrous, 3 mm long, cleft above. Drupe black when dry, somewhat pubescent, ultimately nearly glabrous,

2-lobed, the lobes ovoid, about 7 mm long, each lobe 1- or 2-celled, each cell containing a single seed.

LUZON, Benguet Subprovince, Mount Tonglon, *For. Bur.* 5022 Curran (type), August, 1906, a small tree with white flowers near the summit of the mountain, altitude probably about 2,000 m: Bontoc Subprovince, Bauco, *Vanoverbergh* 1372, August, 1911, altitude 1,250 m.

A species with somewhat the aspect of *Grewia multiflora* Juss., and *G. laevigata* Vahl, but quite different from both in its pubescence.

MALVACEAE.

SIDA L.

Sida puberula sp. nov.

Species *S. corylifoliae* Wall. affinis, differt omnibus partibus plus minusve cinereo-stellato-puberulis, aristis carpellorum brevioribus, pubescentibus, non reflexo-villosis.

An erect branched shrub about 3 m high (*fide* Vanoverbergh). Branches terete, cinereous-puberulent. Leaves oblong-ovate, firmly chartaceous, base somewhat cordate, apex acute or slightly acuminate, the margins crenate-denticulate, 3 to 8 cm long, 2 to 4.5 cm wide, the upper surface stellate-puberulent with scattered hairs, the lower surface much paler and densely cinereous-stellate-puberulent; basal nerves 2 pairs, the outer pair much shorter than the inner, the inner pair reaching to about the middle of the leaf, the lateral nerves above the basal ones about 4 on each side of the midrib, the reticulations few, lax; petioles densely cinereous-stellate-puberulent, 1.5 to 2.5 cm long; stipules setaceous, about 4 mm long. Flowers orange-yellow, rather large, axillary, solitary, mostly somewhat crowded near the ends of the branches, the peduncles stellate-puberulent, reaching a length of 5 cm, somewhat geniculate near the apex. Calyx about 1.5 cm long, 2 cm in diameter, the lobes ovate, acuminate, 8 to 9 mm long, outside stellate-puberulent, inside puberulent with simple hairs. Petals obliquely and very broadly obovate, about 2 cm long, 2.5 cm wide, each with from 15 to 20 slender nerves. Staminal-tube cylindrical, densely pubescent, about 8 mm long, 3 mm in diameter; stamens very numerous, the anthers about 1 mm long, 2 mm wide. Styles 9, united for the lower 7 mm, the free portions exerted, about 1.5 cm long. Carpels 9, including the awns about 7 cm long, slightly reticulate on all three faces, glabrous except for the two, pubescent, terminal, 1.5 to 2 mm long awns.

LUZON, Bontoc Subprovince, Bauco, wet hillsides, altitude about 1,350 m, *Vanoverbergh* 853, September 14, 1910.

A species allied to and with much the general appearance of *Sida corylifolia* Wall., differing not only in its much larger size (3 m high), but also in being more or less densely stellate-puberulent throughout, and especially in its carpels having much shorter awns which are not supplied with reflexed bristles.

DILLENACEAE.

SAURAUIA Willd.

Saurauia vanoverberghii sp. nov.

Arbor parva circiter 6 m alta, ramulis subtus foliis inflorescentiisque dense brunneo-setosis; foliis coriaceis, oblongo-obovatis, usque ad 12 cm longis, denticulatis, supra nervis plus minusve setosis exceptis glabra; pedunculis axillaribus, solitariis, quam petiolo longioribus, paucifloris; floribus bracteatis, albidis, circiter 2 cm diametro; styli 5.

A small tree about 6 m high, the branches and branchlets very densely covered with brown or ferruginous, linear, acuminate setae, the setae themselves more or less furfuraceous. Leaves coriaceous, oblong-obovate, 9 to 12 cm long, 3 to 5.5 cm wide, the upper surface ultimately quite glabrous, or the nerves more or less setose, much darker than the lower surface which is rather densely covered with brown setae which like those of the branches and inflorescence are more or less furfuraceous, base rounded, apex acute or slightly acuminate, margins denticulate, the teeth rather irregular, not very close; petioles densely brown-setaceous, 1 to 2.5 cm long; lateral nerves 9 to 11 on each side of the midrib, prominent on the lower surface, curved-ascending, anastomosing, the reticulations distinct. Inflorescence in the axils, solitary, 5 cm long or less, long-peduncled, few-flowered, all parts brown-setose, the peduncle 3 to 4 cm long, the leaf-like bracts subtending the flowers 1.5 cm long or less, similar to the leaves in shape and texture. Flowers white, few, 2 or 3 to several on each inflorescence, about 2 cm in diameter. Sepals ovate, about 5 mm long, setose on the back. Petals obovate, about 8 mm long, glabrous. Stamens many; anthers about 2 mm long. Styles 5, short, free nearly or quite to the base.

LUZON, Bontoc Subprovince, Malamey, *Vanoverbergh 1014*, December 3, 1910, in forests, altitude about 1,500 m.

A species, while similar in vegetative characters to other forms, well characterized by the furfuraceous setae, all of the other Philippine forms having glabrous setae.

GUTTIFERAE.

CALOPHYLLUM L.

Calophyllum glabrum sp. nov. § *Inophyllum*.

Arbor parva, 5 ad 6 m alta, glabra; foliis coriaceis, nitidis, oblongo-ellipticis, usque ad 8 cm longis, basi angustatis, acutis, apice breviter obtuse acuminatis; racemis terminalibus et in axillis superioribus, folia aequantibus vel longioribus; floribus 2.5 ad 3 cm diametro, sepalis decussatis, exterioribus parvis, orbicularis, interioribus multo majoribus; petalis 5 vel 6, anguste oblongis, circiter 13 mm longis.

A small tree, 5 to 6 m high, glabrous in all parts even including the buds. Branches reddish-brown, smooth, slightly wrinkled when dry. Leaves oblong-elliptic, rarely narrowly obovate-oblong, 6 to 8 cm long, 2.5 to 3.5 cm wide, coriaceous, shining, base narrowed, slightly decurrent, acute, apex shortly and obtusely acuminate; midrib prominent on the lower surface, impressed on the upper surface; lateral nerves very fine and dense; petioles 7 to 10 mm long. Racemes terminal and in the uppermost axils, glabrous, simple, equaling or a little longer than the leaves. Flowers 2.5 to 3 cm in diameter, their pedicels 1 to 1.5 cm long, the petals white, the stamens yellow. Sepals 4, concave, in two pairs, the outer two orbicular, 5 to 6 mm in diameter, the inner two oblong-elliptic, about 11 mm long. Petals 5 or 6, white, narrowly oblong, obtuse, about 13 mm long, 4 mm wide. Stamens indefinite; filaments 4 mm long; anthers oblong, 1 to 1.8 mm long. Fruit ovoid, about 1 cm long when young, crowned by the style.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh* 1251, June 13, 1911, in forests, altitude about 1,650 m, with immature fruits, August, 1911.

A species allied to *Calophyllum blancoanum* Pl. & Tr., differing in its smaller leaves and especially in its quite glabrous racemes.

THYMELAEACEAE.

WIKSTROEMIA Endl.

Wikstroemia angustissima sp. nov.

Frutex erectus circiter 1 m altus ramulis inflorescentiisque exceptis glaber; foliis anguste lanceolatis, usque ad 7.5 cm longis, 8 mm latis rectis vel leviter falcatis, acuminatis, breviter petiolatis; floribus subcapitato-dispositis, pallide viridibus, circiter 8 mm longis.

An erect, much branched shrub about 1 m high. Branches slender, terete, smooth, reddish-brown, the ultimate branchlets somewhat appressed-pubescent. Leaves narrowly lanceolate,

chartaceous, glabrous, 4 to 7.5 cm long, 4 to 8 mm wide, straight or slightly falcate, the base acute, the apex acuminate; lateral nerves obscure, ascending, irregular; petioles 1 to 1.5 mm long. Flowers pale-green, subcapitately racemose at the tips of the branches, the peduncles and rachis appressed-pubescent, 5 to 6 mm long, the pedicels pubescent, about 0.5 mm long. Perianth cylindric, in anthesis about 8 mm long, 1.5 mm in diameter, slightly appressed-pubescent externally, 4-lobed, the lobes orbicular-ovate, rounded, about 1 mm long. Stamens eight, 2-seriate, arranged in the upper part of the perianth-tube, the anthers 0.8 to 1 mm long. Ovary oblong; style very short; stigma capitate, 0.5 mm in diameter. Fruit fleshy, red, ovoid, about 7 mm long.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 430* (type), April 26, 1910, altitude about 1,260 m, locally known to the Ilocanos as *suca*; also represented by *Bur. Sci. 5831 Ramos*, Sablan River, Benguet, December, 1908.

A species well characterized by its very narrow, elongated leaves. It is allied to *Wikstroemia lanceolata* Merr., but is distinguished by its relatively longer and narrower leaves.

PRIMULACEAE.

LYSIMACHIA L.

Lysimachia capillipes Hemsl. in Journ. Linn. Soc. Bot. 26 (1889) 48; Pax & Knuth in Engl. Pflanzenreich 22 (1905) 270.

LUZON, Benguet Subprovince, Baguio, in thickets, limestone ravines, altitude about 1,500 m, *Williams 1153*, June, 1904, *Phil. Pl. 845 Merrill*, May, 1911: Bontoc Subprovince, Gaddac, in forests, altitude 1,300 m, *Vanoverbergh 723*, August, 1910.

This species has previously been known only from China, and is with some doubt recorded from the Philippines under Hemsley's name. The specimen collected by Williams was so identified by Dr. C. B. Robinson, but not recorded as it did not agree in all characters with the description of *Lysimachia capillipes* Hemsl. The petioles of the Philippine specimens are 5 to 10 mm long, the leaves are distinctly acuminate, and the pedicels in fruit attain a length of 3 cm. Comparison of Philippine material with authentic specimens of Hemsley's species is desirable, but for the present it is considered advisable to refer our material to *L. capillipes*, pending such comparison.

China.

Lysimachia decurrens Forst. f. Prodr. (1786) 12; Pax & Knuth in Engl. Pflanzenreich 22 (1905) 296.

LUZON, Benguet Subprovince, Mount Tonglon, *Williams 1289*, 1904, *Phil. Pl. 738 Merrill*, May, 1911, altitude about 1,900 m: Bontoc Subprovince, Cuayo, *Vanoverbergh 596*, June, 1910, altitude 1,200 m; Bauco *Vanoverbergh 1189*, April, 1911, altitude about 1,250 m.

Not common and of local occurrence, apparently in the Philippines confined to the Mountain Province, Luzon. India to China and Formosa southward to Java, Timor, and New Caledonia.

MELASTOMATACEAE.

MEDINILLA Gaudich.

Medinilla subsessilis sp. nov.

Frutex 3 ad 4 m altus, glaber; ramis teretibus, nodis setosis; foliis oppositis, oblongo-ellipticis vel oblongo-ovatis, acuminatis, usque ad 16 cm longis, sessilibus vel subsessilibus, 5-plinerviis; paniculis terminalibus, quam folia longioribus, ramis ramulisque verticillatis, bracteis parvis; floribus 4-meris.

An erect glabrous shrub 3 to 4 m high. Branches terete; nodes densely setose. Leaves firmly chartaceous or subcoriaceous, opposite, sessile or subsessile, oblong-elliptic or oblong-ovate, 11 to 16 cm long, 5 to 6 cm wide, somewhat shining, of about the same color on both surfaces, brownish-olivaceous when dry, the apex rather slenderly acuminate, the base acute; nerves 2 pairs, the lower pair leaving the midrib near the base, the upper pair at above 2 cm above the base. Panicles terminal, about 20 cm long, the primary branches in distant whorls of fours, more or less spreading, 4 to 7 cm long, the subtending bracts ovate-lanceolate, 8 mm long or less, the secondary branches 1 cm long or less, verticillate at the ends of the primary ones, the subtending bracts small. Flowers apparently pink, 4-merous. Calyx urceolate, 4 mm long, the limb somewhat produced and with 4 shallow, rounded teeth. Petals oblong-obovate, about 8 mm long, 6 to 7 mm wide. Stamens subequal; filaments 4 mm long; anthers lanceolate, acuminate, 5 mm long, the anterior appendages auriculate, less than 1 mm long, the posterior spur about 0.8 mm long.

LUZON, Bontoc Subprovince, Malamey, *Vanoverbergh* 792, August 23, 1910, in forests, altitude about 1,550 m. Igorot *gubangbangtitao*.

A species closely allied to *Medinilla intermedia* Blume, but with differently shaped, acuminate leaves, and larger flowers. Among the Philippine species it is closely allied to *Medinilla myriantha* Merr., and to *M. confusa* Merr., but is quite distinct from both.

Medinilla vanoverberghii sp. nov.

Frutex scandens, nodis setaceo-barbatis exceptis glaber; ramulis crassis, griseis, teretibus vel angulatis; foliis oppositis, petiolatis, ellipticis vel obovato-ellipticis, apice rotundatis, basi acutis vel leviter acuminatis, 5-plinerviis; paniculis axillaribus, multifloris, pendulis, usque ad 40 cm longis; floribus parvis, 4-meris, staminibus aequalibus.

A scandent shrubby plant, glabrous except the prominently setose-barbate nodes. Branchlets light-gray, smooth, terete or somewhat angled. Leaves opposite, elliptic or obovate-elliptic,

16 to 20 cm long, 10 to 13 cm wide, coriaceous, glabrous, shining, the apex broadly rounded, the base slightly acuminate or acute; nerves 5, prominent, the two lateral pairs leaving the midrib shortly above the base; reticulations very lax, or usually entirely obsolete; petioles stout, about 2 cm long. Panicles solitary, axillary, pendulous, about 40 cm long, the branches more or less spreading, in whorls of four branches each, the whorls scattered, the primary branches 5 cm long or less, bearing at their apices usually four, secondary, umbellately disposed branches, these again bearing from two to four shorter tertiary ones. Flowers pink, 4-merous, two to four on the ultimate branchlets, the pedicels 2 to 3 mm long. Calyx 3 mm long, the limb slightly produced. Petals 4, 6 to 7 mm long, 5 to 6 mm wide, very prominently obliquely obovate, base narrowed. Stamens 8, equal, the filaments 3.5 mm long; anthers about 4 mm long, the dorsal spur about 0.5 mm long, the anterior appendages short, curved. Bracts and bracteoles none or very small.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh* 448, May, 1910.

A species well characterized by its opposite, broadly obovate-elliptic or elliptic, rounded, 5-plinerved leaves, and especially by its long, pendulous, axillary inflorescence. Among the Philippine species it is probably most closely allied to *Medinilla multiflora* Merr., but differs from that species especially in its larger, quite differently-shaped leaves, more numerous nerves, longer petioles, and other characters.

ARALIACEAE.

SCHEFFLERA Forst.

Schefflera albida sp. nov. § *Cephaloschefflera*.

Arbor 4 ad 5 m alta; foliis circiter 13-foliolatis, foliolis oblongis, coriaceis, supra glabris, subtus densissime et minute stellato-pubescentibus, indumento albido vel subflavido, basi rotundatis, apice breviter acuminatis; capitulis racemoso-dispositis, numerosis, circiter 1.5 cm diametro, globosis; fructibus 6-locellatis.

A tree 4 to 5 m high. Leaflets about 13, their petiolules 4 to 8 cm long, the blades oblong, coriaceous, 16 to 25 cm long, 6 to 9 cm wide, the upper surface glabrous, somewhat shining, dark-brown when dry, the lower surface very densely covered with white or pale-yellowish, very short, stellate hairs. Inflorescence terminal, the racemes racemosely arranged up to 20 cm in length, the heads numerous, in fruit globose, about 1.5 cm in diameter, their peduncles 1 to 1.5 cm long, the inflorescence somewhat furfuraceous, becoming nearly glabrous. Flowers unknown.

Fruits numerous in each head, densely disposed, somewhat obovoid, angled, the apex conical, 6-celled, 6-seeded.

LUZON, Bontoc Subprovince, Malamey, *Vanoverbergh 958*, October 19, 1910, in forests, altitude, 1,550 m. Father Vanoverbergh notes that the whole tree is white, and that the heads of fruits are brown, with the odor of carrots.

A very characteristic species, distinguished from the other three known Philippine species of the section by the dense, pale, stellate indumentum on the lower surfaces of its leaflets.

ERICACEAE.

VACCINIUM L.

Vaccinium indutum Vid. Rev. Pl. Vasc. Filip. (1886) 169.

This apparently rare species is known only from Bontoc, and has previously been known only by the type collection, *Vidal 1831*. It is also represented by *Vanoverbergh 1013*, from Malamey, Bontoc, growing in forests at an altitude of about 1,500 m. Vidal gives *banuay* as the local name of the species.

GENTIANACEAE.

EXACUM Linn.

Exacum parviflorum sp. nov.

Herba erecta, glabra, haud ramosa, circiter 30 cm alta, caule quadrangulare; foliis anguste lanceolatis, sessilibus, obscure trinerviis, 1 ad 3 cm longis; floribus 4-meris, circiter 1.5 cm longis.

An erect, rather slender, unbranched herb, the stems 4-angled, about 2 mm in diameter. Leaves sessile, narrowly lanceolate, 1 to 3 cm long, less than 5 mm wide, obscurely 3-nerved, obtuse or subacute. Inflorescence terminal, few-flowered, racemose, the pedicels 2 cm long or less. Flowers 4-merous, blue, about 1.5 cm long. Calyx-lobes lanceolate, long-acuminate, keeled but not winged on the back, 6 to 7 mm long, 2.5 mm wide. Corolla-tube 4 to 5 mm long, somewhat contracted at the throat, the lobes 10 to 11 mm long, 5 mm wide, elliptic-lanceolate, long-acuminate. Filaments 2 mm long; anthers straight, 5 mm long, obtuse. Ovary ovoid; style 2 mm long.

LUZON, Bontoc Subprovince, Vila, *Vanoverbergh 758*, August 15, 1910, hillsides, altitude about 1,220 m.

The second species of the genus to be found in the Philippines, differing from *Exacum tetragonum* Roxb., to which it does not appear to be very closely allied, by its more slender, unbranched stems, smaller leaves, and especially in its much smaller flowers.

APOCYNACEAE.

TRACHELOSPERMUM Lemaire.

Trachelospermum vanoverberghii sp. nov.

Frutex scandens, glaber; foliis oblongo-ellipticis ad oblongo-lanceolatis, nitidis, utrinque angustatis, basi acutis, apice acuminate, usque ad 7 cm longis; cymis axillaribus terminalibusque, longe pedunculatis, paucifloris; floribus circiter 18 mm diametro.

A slender, glabrous, woody vine 2 to 3 m high, or (?) longer, the branches slender, brown or reddish-brown. Leaves oblong-elliptic to oblong-lanceolate, 3 to 7 cm long, 1 to 2.5 cm wide, narrowed at both ends, base acute, apex shortly and obtusely acuminate, shining, the lower surface a little paler than the upper, when young membranaceous, soon becoming chartaceous or somewhat coriaceous; nerves 7 to 10 on each side of the midrib, rather distant, slender, straight, anastomosing, the reticulations lax; petioles about 3 mm long. Cymes mostly terminal, sometimes axillary, solitary, few-flowered; peduncles slender, 1.5 to 3.5 cm long, trichotomous and 3-flowered, or the branches themselves again trichotomous, each branchlet bearing 3 flowers, the pedicels slender, 5 to 10 mm long. Sepals oblong-ovate, acute, about 2.5 mm long. Corolla-tube about 5 mm long, about 3 mm in diameter in the more or less inflated middle, glabrous inside and outside, the lobes spreading, strongly obliquely obovate, about 9 mm long, 6 to 7 mm wide, throat naked, not villous. Anthers inserted near the middle of the tube, included, lanceolate, acuminate, 3 mm long, cells produced at the base, adherent to the stigma; style slender, 1 to 1.5 mm long. Follicles unknown. Flowers white and pink.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 432, 1230* (type), April, 1910, and June, 1911, altitude 1,450 to 1,650 m, in forests and on hillsides: Benguet Subprovince, Baguio, *Williams 1160*, June 22, 1904, *Bur. Sci. 14084 Robinson*, May, 1911. I suspect also that *Loher 3880*, from Mount Arayat, Province of Pampanga, Luzon, is also referable here, of which a small fragment is in our herbarium. It was determined at Kew as *Trachelospermum fragrans* Hook. f.

The species above described is allied to *Trachelospermum fragrans* Hook. f., differing from that species especially in its corolla-tube and throat being quite glabrous; it is also manifestly allied to *T. jasminoides* Lemaire of China, but seems to be sufficiently distinct from that species.

The only representative of the genus for the Philippines, one species previously described, *T. philippinense* Elm., being a synonym of *Micrechites schrieckii* Rolfe.

VERBENACEAE.

CLERODENDRON L.

Clerodendron vanoverberghii sp. nov. *Euclerodendron*, § *Paniculata*.

Frutex circiter 4 m altus, pubescens; foliis ovatis, integris, circiter 13 cm longis, basi late rotundatis, subtruncatis, vel leviter cordatis, apice acuminatis, subtus glandulosis; paniculis terminalibus subdiffusis, bracteis paucis, parvis; calycis lobis ovatis, acutis; corolla circiter 2 cm longa.

An erect shrub about 4 m high, all parts more or less densely pubescent with rather soft, spreading, brownish hairs. Younger stems somewhat 4-angled, densely pubescent. Leaves ovate, 10 to 14 cm long, 10 cm wide or less, chartaceous, entire, the base broad, rounded, subtruncate, or slightly cordate, the apex sharply acuminate, the upper surface pubescent with scattered hairs, more densely pubescent on the nerves and midrib, the lower surface more densely pubescent than the upper, and with numerous, minute, shining, yellowish glands; nerves about 7 on each side of the midrib; petioles densely pubescent, 4 to 5 cm long. Panicles terminal, about 15 cm long and nearly as wide, the primary branches spreading, the lower ones subtended by reduced leaves, all parts pubescent. Bracts scattered, narrowly oblong-obovate, 5 to 6 mm long, pubescent, the bracteoles similar but smaller and somewhat spatulate. Flowers white, red in the center. Calyx pubescent, funnel-shaped, about 9 mm long, persistent and loosely enclosing the fruit, the lobes ovate, acute, 3 to 4 mm long. Corolla-tube straight, cylindric, 1.8 to 2 cm long, 2 mm in diameter, somewhat pubescent, the lobes oblong, 7 to 8 mm long, 3 mm wide, obtuse or acute, spreading or recurved. Filaments as long as the corolla-tube, exerted, slightly falcate, straight. Fruit (immature), globose, 5 mm in diameter, loosely enclosed in the persistent calyx.

LUZON, Bontoc Subprovince, Bauco, in forests, altitude about 1,650 m, *Vanoverbergh* 838, September 9, 1910.

A species manifestly allied to *Clerodendron infortunatum* L., *C. villosum* Bl., *C. cumingianum* Schauer, and *C. brachyanthum* Schauer, differing from all in its rather broad, acute, not slenderly acuminate calyx-lobes. It is, perhaps, most closely allied to *C. brachyanthum* Schauer, but has a very much longer corolla than has that species.

Clerodendron multibracteatum sp. nov. *Euclerodendron*, § *Densiflora*.

Arbor 4 ad 9 m alta, ramulis, foliis ad nervos, paniculisque plus minusve pubescentibus; foliis oblongis vel oblongo-ovatis,

integris vel subintegris, acuminatis, basi acutis vel subrotundatis, usque ad 13 cm longis, subtus dense minuteque glanduloso-punctatis; paniculis terminalibus, bracteis bracteolisque confertis, albidis vel purpureis, ovatis, 1 ad 2.5 cm longis, diu persistentibus; corollae tubo circiter 7 mm longo.

A tree 4 to 9 m high. Branches terete, brownish, lenticellate, the branchlets rather densely pubescent with short appressed hairs. Leaves oblong to oblong-ovate, subcoriaceous, entire, or rarely with few, scattered, irregular teeth, 8 to 13 cm long, 4 to 5.5 cm wide, base acute or somewhat rounded, the apex acuminate, the acumen often rather slender, blunt, the upper surface glabrous except for the somewhat pubescent midrib and nerves, the lower surface with numerous, minute, shining glands, also pubescent on the midrib and nerves; lateral nerves 6 to 8 on each side of the midrib, prominent, the reticulations rather lax; petioles pubescent, 1.5 to 2.5 cm long. Panicles terminal, 10 to 15 cm long, the branches somewhat spreading, pubescent, naked below, each subtended by large bracts, the flowers crowded at the apices of the branches, surrounded by numerous bracts and bracteoles. Lower bracts 2.5 cm long, the upper ones and the bracteoles narrowly ovate or ovate, acuminate, thin, sparingly pubescent and glandular, base narrowed, 1 to 1.5 cm long, in anthesis white, persistent and pink or purplish in fruit. Flowers white. Calyx somewhat longitudinally plicate, the lobes broadly ovate, acuminate, 5 to 6 mm long. Corolla-tube cylindrical, 7 mm long, 2 mm in diameter, nearly glabrous, the lobes narrowly elliptic-ovate, obtuse or acute, recurved, 5 to 6 mm long, 2.5 mm wide, slightly pubescent. Filaments long-exserted, recurved; anthers 1.5 mm long. Style 1.5 cm long. Fruit globose, about 6 mm in diameter, loosely enclosed by the persistent calyx, the bracts and bracteoles also persistent in fruit.

LUZON, Bontoc Subprovince, Malamey, *Vanoverbergh* 777, August 23, 1910, in forests, altitude 1,550 m, in flower (type): Lepanto Subprovince, trail to Balbalasan, *For. Bur.* 5713 *Klemme*, November 19, 1906, in fruit, altitude 1,600 m, locally known as *palutan*. MINDORO, Mount Halcon, in forests, altitude about 1,800 m, *Merrill* 5516, November, 1906, fruits fallen.

A species probably as near *Clerodendron macrostegium* Schauer as to any other species, but entirely different from that form, and not closely allied to it. It is well characterized by its rather large, numerous, crowded, white or colored bracts and bracteoles which persist until after the fruit is matured, its oblong leaves, and its short flowers.

SCROPHULARIACEAE.

MICROCARPAEA R. Br.

Microcarpaea minima (Koenig) comb. nov.

Paederota minima Koenig in Retz. Obs. 5 (1789) 10.

Microcarpaea muscosa R. Br. Prodr. (1810) 436; Benth. in DC. Prodr. 10 (1846) 433; Hook. f. Fl. Brit. Ind. 4 (1884) 287.

Microcarpaea alterniflora Blume Bijdr. (1826) 744.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 939*, October, 1910, in rice paddies, altitude about 1,250 m.

This genus has previously not been reported from the Philippines, although the species is of wide distribution, extending from India and Ceylon to southern China, Malaya, and tropical Australia. The earliest specific name is here adopted.

LABIATAE.

TEUCRIUM L.

Teucrium philippinense sp. nov. § *Scrodonium* Benth.

Herba annua, 30 ad 60 cm alta, ramosa, leviter ciliato-pilosa; foliis longe petiolatis, membranaceis, oblongo-ovatis, acuminatis, basi rotundatis vel subacutis, usque ad 7 cm longis, margine prominente crenato-serratis; racemis terminalibus axillaribusque, usque ad 10 cm longis, verticillatris 2-floris; floribus circiter 9 mm longis, calycibus ciliatis, 4 mm longis.

An annual, erect or ascending, branched herb 30 to 60 cm high, all parts somewhat ciliate-pilose. Stems slender, 4-angled, sulcate. Leaves opposite, oblong-ovate, membranaceous, 3.5 to 7 cm long, 2 to 3 cm wide, the apex acuminate or merely acute, the base subacute or rounded, the margins, except near the base, prominently crenate-serrate, both surfaces with scattered, weak, white hairs, especially on the nerves, the lower surface a little paler than the upper one; lateral nerves slender, 4 or 5 on each side of the midrib; petioles slender, 1.5 to 3 cm long. Racemes terminal and axillary, simple, ciliate, when young 2 to 3 cm long, in maturity up to 10 cm long, the flowers opposite, their pedicels 2 to 3 mm long; bracteoles ciliate, lanceolate, 3 to 5 mm long. Calyx ciliate, somewhat cup-shaped in anthesis, 4 mm long, obscurely 2-lipped, the lower two teeth lanceolate, acuminate, narrower than the upper three which are ovate, obtuse or acute, and the middle one twice as large as the lateral ones; tube somewhat inflated in fruit. Corolla exserted, slender, pink, 9 mm long, the tube 3 to 4 mm in length; lower lateral lobes of the lip spreading, oblong-ovate, about 1.5 mm long, the

upper lateral lobes, oblong, obtuse, ascending, shorter than the lower ones, the terminal lobe orbicular-ovate, rounded, concave, 3 mm in diameter. Nutlets globose, brown, smooth, slightly glandular, about 1.2 mm in diameter.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 1374* (type), August 17, 1911, in forests, altitude about 1,650 m. Benguet Subprovince, Baguio, *For. Bur. 4935 Curran*, August, 1906, at base of limestone rocks.

The first species of the genus to be reported from the Philippines, apparently allied to the Indian *Teucrium tomentosum* Heyne, judging from the description of that species. The specimens collected by Curran were distributed as *Pogostemon*, probably as *Pogostemon nepetoides* Stapf. Later, doubting the correctness of my determination, a duplicate was sent to Kew for comparison with Stapf's type. The comparison was made by Mr. N. E. Brown, who reported that Curran's specimen was totally different from any *Pogostemon* in the Kew Herbarium. As there were no flowers on my retained specimen, no further attempt was made to determine it until it was rediscovered by Father Vanoverbergh. The two specimens cited manifestly represent the same species even though there are no flowers on Curran's specimen for comparison.

ACROCEPHALUS Benth.

Acrocephalus indicus (Burm.) O. Ktze. *Rev. Gen. Pl.* (1891) 511.

Prunella indica Burm. *Fl. Ind.* (1768) 130.

Ocimum capitellatum L. f. *Suppl.* (1781) 276.

Acrocephalus capitatus Benth. in *Wall. Pl. As. Rar.* 2 (1831) 18;

Hook. f. Fl. Brit. Ind. 4 (1885) 611; *F.-Vill. Novis. App.* (1880) 163.

LUZON, Bontoc Subprovince, Abuling, *Vanoverbergh 923*, October, 1910: Benguet Subprovince, Ambuklao to Daklan, *Merrill 4384*, October, 1905: Province of Tarlac, Concepcion, *Merrill 3622*, November, 1903: Province of Rizal, *Bur. Sci. 10899 Ramos*, *Phil. Pl. 448 Ramos*: Province of Bulacan, Norzagaray, *Yoder 128*, December, 1906: Province of Laguna, Los Baños, *Hallier s. n.*, December, 1903.

Father Villar's record for this species as a Philippine plant has not previously been verified. India to Burma, Indo-China, China (*vide* Willdenow), Java, Sumatra, and Borneo.

MESONA Blume.

Mesona philippinensis sp. nov.

Herba erecta, vix ramosa, usque ad 50 cm alta, omnibus partibus plus minusve pallide fulvo-pubescentibus; foliis subsessilibus, oblongo-ellipticis vel anguste obovato-ellipticis, usque ad 5 cm longis, acutis, margine crenato-denticulatis; inflorescentiis densis, verticillastris circiter 20-floris; calycibus 2-labiatis, labio inferiori integro, superiori 3-lobato; corolla 5 mm longa.

An erect, unbranched, aromatic herb 50 cm high or less, the stems, leaves, and inflorescence more or less clothed with weak,

jointed, pale-fulvous hairs that are more or less crisped when dry. Stems rather slender, obscurely angled, usually somewhat sulcate when dry, pale-brown or reddish-brown. Leaves oblong-elliptic or narrowly obovate-elliptic, membranaceous or chartaceous, brownish when dry, 3 to 5 cm long, 1.5 to 2 cm wide, the apex acute, the base narrowed, acute, the margins distinctly crenate-denticulate; petioles 2.5 mm long or less, often obsolete and the leaves sessile or subsessile; lateral nerves ascending, about 7 on each side of the midrib. Inflorescence rather dense, 8 to 12 cm long, about 1.5 cm in diameter, the whorls close or somewhat distant, 20 or more flowers in each, the bracts subtending each whorl ovate, 7 to 10 mm long, 5 to 6 mm wide, narrowed at both ends, acuminate, more or less hairy, ultimately deciduous; pedicels densely hairy, 6 mm long or less. Calyx somewhat hairy, in anthesis about 3 mm long, 2-lipped, the lower lip oblong, rounded, entire, the other with a large central lobe and two smaller lateral ones, in fruit somewhat accrescent, cylindrical, slightly inflated below, about 5 mm long. Corolla nearly white, glabrous, 5 mm long, the lower lip oblong, 2.5 to 3 mm long, the upper rhomboid, inflated, nearly 2 mm square, entire or obscurely toothed. Stamens four, exserted, the lower two 6 mm long, the upper two 5 mm in length and with an oblong, obtuse, thin, 1 mm long appendage near the base. Style slender, 6 mm long. Nutlet oblong, dark-brown or black, about 1.5 mm long, surrounded by a transparent, gelatinous coating.

LUZON, Lepanto Subprovince, *Merrill 4500*, October 29, 1905, on open grassy slopes, altitude about 2,000 m (type): Bontoc Subprovince, *Father M. Vanoverbergh 601, 903*, June, October, 1910, altitude about 1,150 m. *Loher 4201*, in the Kew Herbarium, is probably the same.

No species of the genus previously has been reported from the Philippines, there being at present known *Mesona wallichiana* Benth., of the Himalayan region, *M. chinensis* Benth., *M. procumbens* Hemsl., and *M. prunelloides* Hemsl., from China, and *H. palustris* Bl., of Java, Celebes and Borneo.

LENTIBULARIACEAE.

UTRICULARIA L.

Utricularia exoleta R. Br. Prodr. (1810) 430; Clarke in Hook. f. Fl. Brit. Ind. 4 (1884) 329; Prain in Journ. As. Soc. Beng. 74² (1905) Extra Number 368.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 663*, July and September, 1910, in rice paddies, altitude about 1,250 m.

Not previously reported from the Philippines. India to Hongkong through Malaya to northern Australia.

ACANTHACEAE.

LEPIDAGATHIS Willd.

Lepidagathis subglabra sp. nov.

Suffruticosa, erecta, ramosa, circiter 1 m alta, subglabra, bracteis parce ciliatis; foliis majoribus lanceolatis, late lanceolatis, vel oblongis, usque ad 4 cm longis, subtus ad costa nervisque parce puberulis, foliis minoribus oppositis; spicis axillaribus terminalibusque, solitariis, 1 ad 2.5 cm longis; bracteis oblongo-lanceolatis, acuminatis, margine obscure ciliatis; floribus 4-meris; corolla 8 mm longa.

A suffrutescent, much-branched plant about 1 m high, the branches slender, terete, olivaceous, glabrous, the ultimate branchlets slightly 4-angled. Leaves opposite, of each pair one always much larger than the other, the larger leaves lanceolate, broadly lanceolate, or oblong, chartaceous, 2 to 4 cm long, 0.8 to 1.7 cm wide, entire, the base acute, the apex acuminate, glabrous, shining and rather dark-colored above when dry, beneath slightly paler and puberulent on the midrib and nerves; nerves 3 or 4 on each side of the midrib; petioles about 5 mm long; the smaller leaves of each pair similar to the larger ones but sessile and mostly less than 5 mm long. Spikes terminal and in the upper axils, solitary, 1 to 2.5 cm long, 5 to 8 mm in diameter, rather dense, sessile or sessile, the bracts oblong-lanceolate, acuminate, about 6 mm long, 1.7 to 2 mm wide, keeled, greenish when dry, the margins obscurely ciliate, otherwise glabrous. Calyx-lobes subequal in length, 6 to 7 mm long, all acuminate, slightly ciliate on the margins with short hairs, one oblong, about 2 mm wide, 3-nerved, two linear, less than 1 mm wide, 1-nerved, and the fourth deeply cleft, the lobes about 1 mm wide. Corolla white, glabrous, 8 mm long, the tube constricted below the anthers, the upper lobe subentire or minutely retuse, about 3 mm long, 2 mm wide, the lower lobe 3-cleft, the resulting lobes as long as the upper lobe but narrower. Anthers about 1 mm long, one cell slightly higher than the other, the cells parallel, contiguous. Ovary ovoid, glabrous, 1.5 mm long; style 2.5 mm long.

LUZON, Bontoc Subprovince, Malamey, *Vanoverbergh* 507, May 10, 1910, in forests, altitude about 1,600 m.

A species apparently well characterized among the Philippine forms by its subglabrous inflorescence, the bracts and calyx-segments being only slightly ciliate on the margins with rather short hairs. It resembles somewhat *Lepidagathis psilantha* Nees., but differs from that species in its larger, solitary, not clustered spikes. It differs from *L. dispar* C. B. Clarke in the same characters, although resembling that species in its unequal leaves.

CUCURBITACEAE.

MELOTHRIA L.

Melothria lobata sp. nov. § *Solena*.

Species *M. mucronatae* valde affinis, differt foliis profunde palmato-lobatis.

A slender, herbaceous, dioecious vine reaching a length of 2 m or more, the stems slender, sulcate, glabrous or with very few scattered hairs. Leaves ovate in outline, deeply palmately 5-lobed, 3.5 to 6 cm long, 3 to 5 cm wide, membranaceous, dark-colored when dry, both surfaces punctate-scabrid with small protuberances, slightly hispid on the nerves, the lobes extending two-thirds to three-fourths to the base, oblong, obovate, or oblong-obovate, acute or obtuse, usually mucronate, sparingly and irregularly toothed, the sinuses narrower or about as broad as the lobes, rounded or subacute; nerves 5, palmate; petioles 1.5 to 3 cm long, glabrous or with few scattered hairs; tendrils slender, simple, 5 to 15 cm long. Male flowers not seen. Female flowers in axillary, short-peduncled, few-flowered umbels, whitish, the peduncles 5 mm long or less, the pedicels usually about 5, 2 to 2.5 mm long. Ovary oblong-elliptic, about 3 mm long, constricted below the limb, the calyx above the ovary 2.5 to 3 mm long. Calyx teeth 5, narrow, short, less than 1 mm long. Corolla villous inside, the lobes oblong, acute or obtuse, 2.5 to 3 mm long. Disk fleshy. Style 3 mm long, 3-lobed at the apex; stigmas flattened, cleft. Fruit not seen.

LUZON, Bontoc Subprovince, Bauco, along trails, *Vanoverbergh* 1241, June 11, 1911, altitude about 1,300 m.

CAMPANULACEAE.

CAMPANUMOEIA Blume.

Campanumoeia truncata (Wall.) Endl. Gen. Pl. 1 (1836) 515.

Codonopsis truncata Wall. Cat. (1829) no. 1301, nomen; A. DC. Monogr. Camp. (1830) 122, Prodr. 7 (1839) 423.

Campanumoeia axillaris Oliv. in Hook. Ic. III 8 (1888) pl. 1775; Hemsl. in Journ. Linn. Soc. Bot. 26 (1889) 7.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh* 965, October 27, 1910, altitude about 1,450 m, growing in wet places, flowers red.

Burma and southern China; not previously reported from the Philippines. The second species of the genus for the Archipelago, and of special interest as it adds another species to the long list of continental types found in northern Luzon.

I can see no valid reason why Wallich's specific name should not be accepted for this plant, as Hemsley states, l. c., that Wallich's plant is

certainly the same as the Chinese one. Whether or not *Cyclodon distans* Griff., is the same or not has no bearing on the case, as it was not published until 1851.

LOBELIA L.

Lobelia bialata sp. nov. § *Isolobus*.

Planta parva, glabra, erecta vel suberecta, circiter 10 cm alta, ramosa; caulibus tenuiter bialatis; foliis elliptico-ovatis, acuminate, basi angustatis, sessilibus vel subsessilibus, usque ad 2 cm longis et 1 cm latis, superioribus minoribus, margine distincte serratis; pedunculis axillaribus, solitariis, folia subaequantibus; floribus roseis, circiter 5 mm longis.

A small, erect or suberect, branched, glabrous, annual herb about 10 cm high, the lower parts of the stem sometimes decumbent but scarcely rooting at the nodes. Stems slender, narrowly 2-winged. Leaves thin, elliptic-ovate, up to 2 cm long and 1 cm wide, the upper ones smaller, margins rather distantly and distinctly sharply serrate, base narrowed, acute, sessile or subsessile, apex shortly acuminate or acute. Pedicels axillary, slender, solitary, about as long as the leaves, 1-flowered. Calyx-tube broadly ovoid, nearly 2 mm long and thick, green, the teeth 5, linear, erect, 2 to 2.5 mm long. Corolla about 4 mm long, pink, the lower lip violet, subequally 3-lobed, the lobes oblong-ovate, pointed, about 1.5 mm long, the upper lip with two linear-lanceolate, acuminate, 1.5 mm long teeth. Filaments united; 3 fertile anthers glabrous, two sterile ones ciliate at the apex. Stigma slightly cleft. Fruit somewhat ovoid, narrowed at both base and apex, half-superior, about 3 mm long, the part above the calyx 2-valved. Seeds numerous, brown, ellipsoid, smooth, about 0.3 mm long.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh* 902, October 5, 1910, in wet places, altitude about 1,350 m.

This species is closely allied to *Lobelia radicans* Thunb., but differs in a number of characters, in its broader, differently-shaped leaves, its stems not prostrate and rooting, its smaller flowers, and its two lower filaments glabrous, not hairy. It is even more distinct from *Lobelia filiformis* Lam., both as originally described by Lamarck from the Isle of France material, and as later figured and described by Cavanilles from Luzon material.

COMPOSITAE.

BLUMEA DC.

Blumea vanoverberghii sp. nov.

Herba erecta, circiter 1 m alta, ramulis, subtus foliis inflorescentiisque pilosis; foliis oblongo-obovatis ad oblanceolatis, 7 ad 12 cm longis, plus minusve lyrato-lobatis, sessilibus, supra

scabridis; inflorescentiis angustatis, ramulis distantibus, 1 ad 3 cm longis; capitulis circiter 10 mm longis, sessilibus vel breviter pedunculatis, subfasciculatis; floribus flavidis; disco piloso.

An erect herb about 1 m high, the stems striate, pubescent, about 4 mm in diameter. Leaves oblong-obovate to oblong-oblongeolate, 7 to 12 cm long, 2 to 4.5 cm wide, the upper ones gradually smaller, sessile, rather prominently lyrate lobed, acute or acuminate, base narrowed, not decurrent, the lower surface rather softly pilose, the upper surface scabrid, slightly hairy. Inflorescence a terminal, slender, interrupted, pubescent, leafy panicle, 15 to 30 cm long, the branches 1 to 3 cm long in the axils of reduced leaves. Heads about 1 cm long, somewhat crowded on the branchlets, sessile or shortly peduncled. Bracts several-seriate, pubescent, the outer ones 1.5 to 2 mm long, oblong-ovate, the innermost about 7 mm long and 0.8 mm wide. Achenes 1 mm long, hispid; pappus white, scabrid, about 5 mm long. Disk-flowers perfect, about 12 in each head, yellow, the corolla-tube enlarged above, about 7 mm long, 1.5 mm in diameter, 5-toothed. Female flowers marginal, many, slender, 5 to 5.5 mm long, about 0.3 mm in diameter, 3-toothed. Disk somewhat pilose.

LUZON, Bontoc Subprovince, Bauco, *Vanoverbergh 1063*, February 9, 1911, altitude about 1,300 m.

A species characterized by its narrow, elongated, leafy panicles, and its lyrate lobed, coriaceous leaves which are pilose beneath and scabrid on the upper surface. It is somewhat anomalous in *Blumea* on account of its distinctly pilose, not glabrous disk, in this character approaching the very closely allied genus *Merrittia*.

VERNONIA Schreb.

Vernonia phanerophlebia sp. nov. § *Strobocalyx*.

Frutex erectus circiter 2 m altus; foliis oblongo-obovatis, breviter obtuse acuminatis, usque ad 7 cm longis, crassissime coriaceis, nitidis, pagina inferiore prominente glanduloso-punctatis, nervis utrinque 7 ad 10, prominentibus; corymbis terminalibus, parvis, congestis, capitulis 7- vel 8-floris, squamis imbricatis, distincte pubescentibus; achaenio 2.5 mm longo, glanduloso.

An erect shrub about 2 m high. Branches terete, striate when dry, somewhat lenticellate, glabrous, the branchlets distinctly appressed-pubescent. Leaves very thickly coriaceous, oblong-obovate, entire, 3.5 to 7 cm long, 1 to 2.5 cm wide, shining when dry, of about the same color on both surfaces or slightly paler beneath, the upper surface glabrous, the lower appressed-

pubescent on the midrib, prominently glandular-punctate, the apex shortly and bluntly acuminate, the base narrowed, cuneate; lateral nerves 7 to 10 on each side of the midrib, prominent, distant, anastomosing, the reticulations prominent, rather dense, distinct on both surfaces; petioles 5 to 8 mm long, pubescent. Corymbs terminal, appressed-pubescent, rather dense, about 3 cm long, 3 to 5 cm wide. Heads, including the pappus, 8 to 10 mm long, the flowers white and pink. Involucral-bracts several-seriate, imbricate, all distinctly pubescent, the outer ones less than 1 mm long, the inner gradually longer, the innermost oblong, 4.5 to 5 mm long, 1 to 1.2 mm wide, margins prominently ciliate-pubescent. Achenes 7 or 8 in each head, somewhat curved, 2.5 mm long, 4-angled, prominently glandular; pappus pale-straw-colored, rather copious, 5 to 6 mm long.

LUZON, Bontoc Subprovince, Malamey (Piñggat), *Vanoverbergh* 688, July 23, 1910 (type), in forests, altitude about 1,450 m: Benguet Subprovince, Losod, *Bur. Sci.* 5574 *Ramos*, December, 1908.

A species manifestly allied to *Vernonia acrophila* Merr., differing in its somewhat larger, more coriaceous leaves, the nerves more numerous, and also in its more numerous achenes.